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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,866	10/07/2003	Stephan K. Barsun	100200400-2	7397

7590 05/24/2005  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

CHANG, YEAN HSI

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 05/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/681,866	<b>Applicant(s)</b> BARSUN, STEPHAN K.	
	<b>Examiner</b> Yean-Hsi Chang	<b>Art Unit</b> 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-15,17-28,30-38 and 40-55 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 52-55 is/are allowed.
- 6) ☒ Claim(s) 1-5,7-10,15,17-28,30-33,38 and 40-42 is/are rejected.
- 7) ☒ Claim(s) 11-14,34-37,43-51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/22/05 has been entered.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed on 5/5/05 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,728,101 B2 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7-10, 15, 17-18 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachman et al. (US 5,923,531).

Bachman teaches a card support assembly comprising: at least one support member (18, fig. 1), a plurality of printed heat generating circuit cards (40, fig. 1) coupled to the support member (fig. 1), extending non-parallel from the support member and arranged end-to-end (fig. 6), the plurality of cards, collectively, having a front edge (shown in fig. 1) and a rear edge (shown in fig. 6), at least one flow control member (24) being substantially imperforate (fig. 1), wherein the plurality of cards includes a first card (fig. 1) having a first edge (lower edge) proximate the at least one support member and a second opposite edge (upper edge), and wherein the at least one flow control member has a lower surface opposite the second edge (claim 1); wherein the flow control member is coupled to the at least one support member (claim 2); wherein the cards comprise memory cards (see col. 5, lines 64-65) (claim 3); wherein the at least one flow control member comprises a single continuous flow control member and is integrally formed as a single unitary body (shown in fig. 1) (claims 4 and 5); wherein the plurality of cards includes a plurality of transversely spaced cards (shown in fig. 1) (claim 7); wherein the at least one flow control member is substantially imperforate in a transverse direction (shown in fig. 1) (claim 8); wherein the at least one flow control member has a substantially uniform thickness and includes deformed sheet metal (see col. 5, lines 7-10; sheet metal is well known as with uniform thickness) (claims 9 and 10); a gas flow source (94, fig. 9) proximate the front edge, wherein the at least one flow control member extends at least substantially proximate to the gas flow source (shown

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in fig. 9) (claim 15); wherein the at least one support member includes at least one printed circuit board (18, fig. 1; also see col. 5, lines 25-26) (claim 17); wherein the plurality of printed circuit cards that generate heat are removably coupled to the support member (see col. 5, lines 60-67) (claim 18); and a method of assembling a card support being disclosed in the specification (claims 41-42).

Bachman fails to indicate the space between the lower surface of the at least one flow control member and the second edge of the first card being less than 10 mm. It would have been an obvious matter to one having ordinary skill in the art at the time the invention was made to set the space between the lower surface of the at least one flow control member and the second edge of the first card being less than 10 mm for less cooling air transferring between ducting channels on both sides of the first card, since such a modification would have involved a mere change in the size of a component. A mere change in size is generally recognized as being within the level of ordinary skill in the art. MPEP §2144.04, IV A.

5. Claims 19, 22, 24, 26-28, 30-33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachman et al.

Bachman teaches a computing device comprising: a first circuit board (14, fig. 1), a second circuit board (18, fig. 1) connected to the first circuit board, a plurality of printed heat generating circuit cards (40, fig. 1) directly coupled to the second circuit board (fig. 1) and extending non-parallel from the second circuit board, the plurality of cards including first and second cards arranged in an end-to-end relationship or a

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staggered relationship (see fig. 6), wherein the plurality of cards, collectively, having a front edge (shown in fig. 1) longitudinally spaced from a rear edge (shown in fig. 6), and at least one flow control member (24) facing the second circuit board with the cards between the second circuit board and the at least one flow control member (fig. 1), wherein the at least one flow control member is substantially imperforate from the front edge to the rear edge (fig. 1), wherein the first card having a first edge proximate the second circuit board and the plurality of cards further includes a second opposite edge, and wherein the at least one flow control member has a lower surface opposite the second edge (claim 19); a processor (20, fig. 1) connected to the first circuit board (claims 22 and 24); wherein the cards comprise memory cards configured to store data (40, fig. 1) (claim 26); wherein the at least one flow control member comprises a single continuous flow control member (shown in fig. 1) (claim 27); wherein the flow control member is integrally formed as a single unitary body (shown in fig. 1) (claim 28); wherein the plurality of cards includes a plurality of transversely spaced cards (shown in fig. 1) (claim 30); wherein the at least one flow control member is substantially imperforate in a transverse direction (shown in fig. 1) (claim 31); wherein the at least one flow control member has a substantially uniform thickness (shown in fig. 1) and wherein the at least one flow control member includes deformed sheet metal (see col. 7, line 28; sheet metal is well known as with uniform thickness) (claims 32 and 33); and a gas flow source (94, fig. 9) proximate the front edge, wherein the at least one flow control member extends at least substantially proximate to the gas flow source (shown in fig. 9) (claim 38).

Bachman fails to indicate the space between the lower surface of the at least one flow control member and the second edge of the first card being less than 10 mm. It would have been an obvious matter to one having ordinary skill in the art at the time the invention was made to set the space between the lower surface of the at least one flow control member and the second edge of the first card being less than 10 mm for less cooling air transferring between ducting channels on both sides of the first card, since such a modification would have involved a mere change in the size of a component. A mere change in size is generally recognized as being within the level of ordinary skill in the art. MPEP §2144.04, IV A.

6. Claims 20-21, 23, 25 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachman et al. in view of Marconi et al. (US 5,991,163).

Bachman discloses the claimed invention except an I/O board releasably connected to the first circuit board and being supporting a plurality of I/O cards, and a power supply connected to the first circuit board.

Marconi teaches an I/O board (F, fig. 1C) of a computing system, supporting a plurality of I/O cards (C1, fig. 1C) and power supply connections (E, fig. 1C) connected to the I/O board.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Bachman with the I/O board and power supply taught by Marconi for indicating the connections of an I/O board and a power

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supply, since both I/O board and power supply are obvious features of a computing system, and more specifically, a processing unit.

***Allowable Subject Matter***

7. Claims 52-55 are allowed.
8. Claims 11-14, 34-37 and 43-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter: The best prior art of record, Bachman et al. (US 5,923,531), Baik (6,466,448 B1), and Marconi et al. (US 5,991,163), taken alone or in combination, fails to teach or reasonably suggest a card support assembly for a computing device, comprising: a shock absorber coupled to at least one flow control member facing at least one support member with a plurality of printed heat generating circuit cards between the least one flow control member and the at least one support member, and extending into engagement with at least a portion of a second edge of a card of the plurality of printed heat generating circuit cards as set forth in claims 11, 34 and 54-55; and a rigid spacer coupled to the least one flow control member, and extending between a first face of a first card of the plurality of printed heat generating circuit cards and a second face of a second card of the plurality of printed heat generating circuit cards as set forth in claims 13, 36 and 52. Claims 12 and 46-47, 14 and 43-45, 35 and 51, 37 and 48-50, and 53 are dependent claims from claims 11, 13, 34, 36, and 52, respectively.



***Response to Arguments***

10. Applicant's arguments filed 5/5/05 have been fully considered but they are not persuasive. Applicant argues about reference US Pat. No. 5,923,531 to Bachman that the motivation for modifying of the space between the lower surface of the at least one flow control member and the second edge of the second card being less than 10 mm is improper hindsight reasoning. It must be recognized that any judgement on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. In re McLaughlin, 443 F. 2d 1392; 170 USPQ 209 (CCPA 1971). Furthermore, it has not been shown in the disclosure of the current application how the figure 10 mm space between the lower surface of the at least one flow control member and the second edge of the first card was obtained and how the adequate control of air flow was insured by said space being less than 10 mm, since air flows along the surfaces on both sides of each card as shown by arrows 70 and 72 in figs. 5 and 6 of the current application. Therefore, not only the dimension change of the space between the lower surface of the flow control member and the second edge of the first card is a mere change in size, but also said space being less than 10 mm seems not justified as a patentable invention; so the rejections should be considered as proper.

***Correspondence***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yean-Hsi Chang whose telephone number is (571) 272-2038. The examiner can normally be reached on 07:30 - 16:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the Art Unit phone number is (571) 272-2800, ext. 35. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8558.

Yean-Hsi Chang  
Primary Examiner  
Art Unit: 2835  
May 23, 2005

  
**YEAN-HSI CHANG**  
**PRIMARY EXAMINER**